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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,092	03/02/2004	Hideyuki Kawai	46389	1177
1609	7590	02/15/2006		
ROYLANCE, ABRAMS, BERDO & GOODMAN, L.L.P. 1300 19TH STREET, N.W. SUITE 600 WASHINGTON,, DC 20036			EXAMINER SASTRI, SATYA B	
			ART UNIT 1713	PAPER NUMBER

DATE MAILED: 02/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/790,092

Applicant(s)

KAWAI ET AL.

Examiner

Satya B. Sastri

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 7-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 8, 11, 12 and 15 is/are rejected.
- 7) ☒ Claim(s) 7, 9, 10, 13, 14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 5/28/04, 6/29/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. This office action is in response to application filed on March 02, 2004. Preliminary amendment filed on October 13, 2005 with addition of new claims has been entered. Upon further consideration, restriction requirement is withdrawn and all claims are examined for patentability. *Claims 1-4, 7-15* are now pending in the application.

#### ***Specification***

2. The disclosure is objected to because of the following informalities: On page 6, line 20, it is unclear as to what “bisharofolmerl” refers to.

Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 102 and 103***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

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such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claim 1** is rejected under 35 U.S.C. 102(b) as being anticipated by Behan et al. (US 5,500,223).

Behan et al. disclose an encapsulating method using silica having a particle size not greater than 100 nm. An emulsion is formed by mixing silica with hydrophobic materials such as flavors, fragrances, cosmetic ingredients etc. to be encapsulated and subsequently gelling the emulsion (abstract, column 3, lines 1-9, working example 1). Thus, claim 1 is anticipated by the prior art.

6. **Claim 1** is rejected under 35 U.S.C. 102(b) as being anticipated by Dupuis et al. (US 6,537,583 B1).

Dupuis et al. disclose a method of preparing capsules consisting of an aqueous liquid core enclosed in mineral coating (abstract). As regards the composition of the inorganic shell, it is composed of at least one oxide and/or hydroxide of aluminum, silicon or zirconium or a transition metal with a particle size up to 200 nm (column 7, lines 1-13 and column 9, lines 4-9). Thus, claim 1 is anticipated by the prior art.

7. **Claims 1, 4, 8, 11, 12** are rejected under 35 U.S.C. 102(b) as being anticipated by Moy (US 5,804,298).

The prior art to Moy concerns microcapsules with reduced shell wall permeability accomplished by way of incorporating inorganic colloidal silica particles into an encapsulation

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dispersion (abstract). The colloidal particles are generally less than about 0.03 mm in diameter and the shell may be formed by an in-situ or interfacial encapsulation technique (column 1, lines 9-14, column 5, lines 65-67 and column 6, lines 1-9). Preferably, a fill solution of the color-forming compounds in a hydrophobic solvent is enclosed within the microcapsule and coated on the back-side of a sheet of paper (column 7, lines 5-15). The donor sheet is coated with a slurry comprising microcapsules having a polymer shell further comprising inorganic particles. The microcapsules are filled with a suitable color-forming compound in a hydrophobic solvent. The capsule slurry may also be combined with a binding agent such as an aqueous sodium alginate, starch or latex (column 7, lines 65-67, column 8, lines 1-10). Thus, *claims 1, 4, 8, 11, 12*, are anticipated by the prior art. Color-forming particles are essentially pigment particles and it is examiner's position that such particles may be charged and thus electrophoretic in nature.

8. *Claims 1, 2* are rejected under 35 U.S.C. 102(b) as being anticipated by Redding, Jr. (US 6,149,953).

Prior art to Redding Jr. concerns seeded microcapsules comprising a core surrounded by a shell having a seeding agent disposed therein for the purpose of imparting enhanced structural or functional characteristics (abstract). The seeding agents may be pH sensitive compounds such as ascorbic acid, citric acid, sodium bicarbonate etc. and the core material may be a liquid material such as mineral oil, vegetable oil, flavors, fragrances etc. (column 4, lines 3-47). The ascorbic acid particles dispersed in the organic shell should be 0.5-200 micrometers in size (column 7, lines 65-67 and column 8, lines 1-4). Thus, *claims 1 and 2* are anticipated by the prior art.

9. *Claims 1-4* are rejected under 35 U.S.C. 103(a) as being unpatentable over Toreki et al. (US 6,780,507 B2).

Prior art to Toreki et al. concerns microcapsules which contain a liquid compound in the core and surrounded by a polymeric shell, membrane or coating (abstract). Shells may be formed from a variety of monomeric liquids or prepolymeric liquids (columns 15-16). Non-reactive compounds may be incorporated into the shell forming formulation. A suspension of solid particulates in a reactive liquid matrix may be utilized a shell-forming liquid. Such particles may be fillers based on metals, microspheres, salts, ceramics, polymers or organic solids (column 16, lines 31-67).

The difference between the prior art and the instant invention is that the prior art does not disclose a shell comprising particles less than  $1\mu\text{m}$  in size.

The prior art does not teach explicitly that the particles dimensions are to be less than  $1\mu\text{m}$ . However, the prior art teaches that the particle size of the filler particles be small enough to avoid clogging of the various components of the apparatus. Given this teaching, it would have been obvious to one skilled in the art to include small filler particles, including particles less than  $100\mu\text{m}$ , as recited in the instant claims, in the shell forming liquid and thereby obtain the instant invention.

***Allowable Subject Matter***

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10. *Claims 7, 9, 10, 13 and 14* are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Instant claims are allowable over closest prior art to Kawai et al. (US 6,654,159 B2), Toreki et al. (US 6,780,507 B2) and Behan et al. (US 5,500,223).

The prior art to Kawai et al. discloses a method of manufacturing electrophoretic device by using an electrophoretic layer containing microcapsules containing colored dispersion medium and charged pigment particles. Furthermore, the prior art to Behan et al. or Toreki et al. do not teach or suggest a sheet comprising a binder and microcapsules with the shell layer containing organic or polymeric particles less than 1 $\mu$ m in size or a sheet comprising a base material and microcapsules with the shell layer containing organic or polymeric particles less than 1 $\mu$ m in size or an electrophoretic device comprising such sheets.

### ***Conclusion***

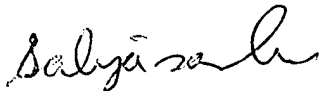
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Satya Sastri at (571) 272 1112.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached at (571) 272 1114.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273 8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



SATYA SASTRI

February 8, 2006



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